REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-5, 7-15, 17-18, 21-22, 24 and 26-29 are currently active in the case. Claims 6, 16, 19-20, 23 and 25 were cancelled by a previous amendment. In the present Request for Reconsideration, none of the claims are amended or cancelled.

In the pending Office Action, Claims 1-4, 7-14, 17-18, 21-22 and 24 were rejected under 35 U.S.C. § 102(e) as being anticipated by Shimizu et al. (U.S. Patent No. 6,971,012, hereinafter "Shimizu"). Claims 5, 15, and 26-29 were indicated as allowable if rewritten in independent form.

Applicants acknowledge with appreciation the indication of allowable subject matter. However, because Applicants believe that independent Claims 1, 11, 17, and 21, from which Claims 5, 15 and 26-29 depend, respectively, include allowable subject matter, Claims 5, 15 and 26-29 are maintained in dependent form a present time.

In response to the rejection of Claim 1 under 35 U.S.C. § 102(e), Applicants respectfully request reconsideration of this rejection and traverses the rejection, as discussed next.

Briefly summarizing, Applicants' independent Claim 1 relates to a data processing apparatus operable to identify code words to form a code word set, present in a marked version of a material item, where the marked version having been formed by combining each of a plurality of parts of a code word with one of a plurality of units from which the material item is comprised. The apparatus includes, *inter alia*: a recovery processor operable to recover at least one part of the code word from a corresponding unit of the marked material item, *a correlator operable to generate for the marked material unit a dependent correlation value by correlating the part of the code word recovered from the material unit*

with a corresponding part of at least one of a re-generated code word from the code word

set, and a detector operable to determine whether at least one of the code words is present in

the marked material item from the dependent correlation value for the part of the code word

exceeding a predetermined threshold, wherein *when the dependent correlation value does*

not exceed the predetermined threshold, the correlator is operable under control of the

detector to iteratively increase a number of code word parts used to form the recovered part

of the code word, each code word part taken from successive material units.

As discussed in Applicants' specification at page 15, lines 18-27, and also shown in

Fig. 8, the features of Applicants' Claim 1 require an iterative process to find a whole code

word because of the *dependency* of respective correlation values. In case the threshold

correlation value of a part of the code word is not met, another code word part is added to the

previously recovered one. This subsequent recovered code word is then again correlated with

the correlator, and if the dependent correlation value of the part of the code word in not met

again, another code word part is added to the recovered code word. This iteration is

continued until either the whole code word is recovered, or the dependent correlation value is

met.

For example, in hierarchical level HL1, the dependent correlation values are

calculated from an individual image or frame 0, 1, 2, etc. At hierarchical level HL2, two

successive images are taken into account (i.e. 0 and 1), and at hierarchical level HL3, four

successive image are taken into account (i.e. 0, 1, 2, and 3.) Please note that the above

discussion is citing examples of embodiments that are provided for explanatory purposes only

and should not be construed to limit the scope of the claims in any fashion.

Turning now to the applied reference, Shimizu is directed to a method of embedding

an electronic watermark, where a detection reliability of the embedded watermark does not

depend on the strength of the signals that are measured in frames. (Shimizu, Fig. 1, Abstract.)

Shimizu explains that a bit stream is prepared to be embedded into a frame. (Shimizu, col. 2, ll. 26-29.) Every motion frame has the same bit stream embedded therein, but for a change in the sign of the bit stream. (Shimizu, col. 2, ll. 26-37.) To detect this bit stream information that is present in each frame, values obtained through observation of frames are accumulated, and the accumulated values are compared with threshold values. (Shimizu, col. 2, ll. 38-43.) This is necessary because the bit information may have been damaged by a compression algorithm before being sent. (Shimizu, from col. 3, l. 67, to col. 4, l. 6). Moreover, the method also embeds the bit stream information of successive image with an alternating sign values, so that the bit stream information can be easier read when successive frames are strongly correlated. (Shimizu, col. 4, ll. 48-67.)

In this respect, Shimizu shows a flowchart for sign inversion with his Figure 4, in a case where MPEG2 compression was used, to avoid that two directly consecutive images have bit stream information with a different sign. (Shimizu, col. 5, ll. 43-59.) The method then uses a inversion cycle that is longer than a frame period to change the sign of the bit stream information. First, the sign of the bit stream information in a frame is detected. (Shimizu, from col. 5, l. 60, to col. 6, l. 15, Step 440.) After this, consecutive bit stream information in frames is checked, until the end of the inversion cycle is reached, to change the sign of the bit stream information. (Shimizu, col. 6, ll. 3-13.)

However, Shimizu fails to teach all the features of Applicants' amended independent Claim 1. In particular, the cited passages of Shimizu fails to teach:

> a correlator operable to generate for the marked material unit *a dependent correlation value* by correlating the part of the code word recovered from the material unit with a corresponding part of at least one of a re-generated code word from the code word set . .

> a detector operable to determine whether at least one of the code words is present in the marked material item *from the dependent correlation value for the part of the code word* exceeding a predetermined threshold.

(Claim 1, portions omitted, emphasis added.) As discussed above, in <u>Shimizu</u>, there is no generation of a dependent correlation value for the market material unit, where the dependent correlation value is a part of the code word recovered from the material unit with a corresponding part of at least one of a re-generated code word from the code word set, as required by Applicants' independent Claim 1. The pending Office Action rejects these features based on the teachings of <u>Shimizu</u> at Figure 4, reference numeral 440. However, as discussed above, reference 440 is a unit that measures the bit stream information of the current frame is measured, to see how many of the bit stream information in the frames have the same sign value. In <u>Shimizu</u>, the bit stream information is exactly the same from frame to frame, with exception of a difference in the sign value, and a degradation that may have resulted from the compression. (See also <u>Shimizu</u>, Fig. 6, showing changing sign values.) But there is no "dependent correlation value" in <u>Shimizu</u> that is generated by "the part of the code word recovered from the material unit with a corresponding part of at least one of a re-generated code word from the code word set," as recited in Applicants' independent Claim 1.

Therefore, the cited passages of <u>Shimizu</u> fail to teach every feature recited in Applicants' Claim 1, so that Claims 1-5 and 7-10 are believed to be patentably distinct over <u>Shimizu</u>. Accordingly, Applicants respectfully traverse, and request reconsideration of, the rejection based on <u>Shimizu</u>.

Independent Claims 11, 17 and 21 recite features analogous to the features recited in independent Claim 1, but directed to different statutory classes, with Claim 11 directed to a method, Claim 17 directed to an encoding data processing apparatus, and Claim 21 directed to a system for identifying versions of a material item. Accordingly, for the reasons stated above for the patentability of Claim 1, Applicants respectfully submit that the rejections of Claims 11, 17 and 21, and all associated dependent claims, are also believed to be overcome in view of the arguments regarding independent Claim 1.
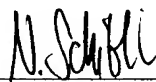
Moreover, the applied reference <u>Shimizu</u> also fails to teach the features of Applicants'

dependent Claim 8. This claim requires *inter alia* that "the plurality of code words are

formed from a first code word having a plurality of predetermined pseudo-randomly

distributed coefficients." The pending Office Action asserts that this feature is taught in

<u>Shimizu</u> at column 8, lines 49-67. But in these passages, <u>Shimizu</u> merely explains that the

detection mask for reading the bit stream information may be shifted related to the target

contents J. (<u>Shimizu</u>, col. 8, ll. 49-64.) Accordingly, <u>Shimizu</u> is silent on the features of

dependent Claim 8 regarding the formation of the code words by using "pseudo-randomly

distributed coefficients." Therefore, Applicants respectfully traverse the rejection of

dependent Claim 8, and requests reconsideration of this rejection.

Consequently, in view of the present Request for Reconsideration, no further issues

are believed to be outstanding in the present application, and the present application is

believed to be in condition for formal Allowance. A Notice of Allowance for Claims 1-5, 7-

15, 17-18, 21-22, 24 and 26-29 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this

application in even better form for allowance, the Examiner is encouraged to contact

Applicants' undersigned representative at the below listed telephone number.

Respectfully submitted,

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